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AFRL/DAGSI hold Annual Symposium

by Jill Bohn, AFRL Public Affairs

WRIGHT-PATTERSON AFB, Ohio — Research teams for 21 winning projects received word on partial funding Feb. 16 during the Joint Air Force Research Laboratory (AFRL)/Dayton Area Graduate Studies Institute (DAGSI) Research Program's 2nd Annual Symposium.

The winning projects were selected from a field of more than 100 preproposals by the Program Selection Panel, whose members represent the AFRL, Ohio industry, and Ohio Board of Regents.

The one-day event staged at Air Force In-

stitute of Technology (AFIT) headquarters, included a review of progress on the previously funded research projects and a poster board display summarizing those reviews by award winners from AFIT, Ohio State University, University of Cincinnati, University of Dayton and Wright State University.

"Over its three year existence, the program has involved over 450 Ohio faculty and students, and over 160 AFRL scientists and engineers, working on over 48 projects valued at approximately \$39 million,"

(See Symposium/P.4)



SIGNS OF PROGRESS — Air Force Institute of Technology student Captain Anttonen (left) shows highlights of team research to Dayton Area Graduate Studies Institute Director Frank Moore during the annual symposium Feb. 16. Anttonen's team, led by Dr. Ramana V. Grandhi of Wright State University received a research award by DAGSI and the Air Force Research Laboratory in 1999 for a project entitled Computational Nonlinear Aerolasticity for Multidisciplinary Analysis and Design.

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Commander

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<http://extra.afrl.af.mil/news/index.htm>

Laboratory shrinks size and cost of spacecraft

by John Brownlee, Space Vehicles Directorate

KIRTLAND AFB, N.M. — Two experimental Air Force Research Laboratory payloads launched on November 14, 2000 aboard the British Defense Evaluation and Research Agency's Space Technology Research Vehicle (STRV-1) may lead to smaller, cheaper spacecraft that can also detect space-based radiation harmful to sensitive spacecraft electronics.

"With Ballistic Missile Defense Organization funding, AFRL and our industrial partner, Lockheed-Martin Astronautics of Denver, Colo., are flying a Multifunctional Structures Demonstration Experiment (MFS DE) on STRV-1 to validate a revolutionary microspacecraft concept," said Jim Guerrero of AFRL's Space Vehicles Directorate.

"MFS DE uses flexible circuitry to connect various AFRL and NASA electronic experiments," Guerrero added. "Because of our weight-reducing design, we can ultimately increase a spacecraft payload capacity by 25-35 percent while lowering design, fabrication, and integration time as well as launch costs, which today can run as high as \$10,000.00 for every pound lifted into orbit."

Because of plug-and-play designs similar to those found in modern desktop computers, the Air Force research team further envisions integrating onboard sensors, instruments, and control functions directly into the structural material that comprises the satellite housing itself. "Basically, this concept is like the electrical wiring and water pipes incorporated into your kitchen wall," Guerrero said.

Traditionally, structural, thermal management, and electronic functions have been fabricated into separate components and then bolted together to form the spacecraft. @

Find additional Features on the web.....

AF Research Lab powers NASA's land-imaging satellite

Consolidation to add extra room for research

Graniero retires from top scientist post

AF Science Fair encourages youthful minds

Portal is entry point for Air Force information

Computer Technology to create seamless environment

by Fran Crumb, Information Directorate

ROME, N.Y., — Air Force Research Laboratory (AFRL) collaborative computer technology, intended to assist users to work together in a “seamless environment” from geographically separated locations, has been made available as a commercial product.

The K2™ collaborative environment has been released by Ball Systems Engineering Operations (BSEO), a unit of Ball Aerospace & Technologies Corp. It was developed for the AFRL Information Directorate’s Information Systems Division at Wright-Patterson Air Force Base, Ohio, under the Air Force’s Dual Use Science & Technology (DUST) program.

“K2™ leverages information and simulation technology to enhance decision support by linking information and software tools together to get critical information to decision-makers – when and where they need it,” said William K. McQuay, program manager for the directorate.

“In 21st-century information-centric enterprises – both military and civilian – geographically separated engineers, scientists, managers and other specialists will jointly develop new products and solve problems,” said McQuay. These teams will be able to access computer-based engineering tools, models and simulations, knowledge bases, and dispersed special facilities.”

With both defense and commercial sectors moving toward virtual and collaborative solutions to bring the right systems to the market or the battlefield at the right time and at the right price, K2™ provides leading-edge technology to implement a vision for distributive collaborative enterprises.

The purpose of the DUST program is to offer financial incentives for Department of Defense contractors to transition technology developed in federal laboratories into the commercial marketplace. BSEO led the development of the K2™ collaborative framework as part of a \$4 million cooperative agreement.

The DUST Collaborative Engineering and Virtual Prototyping effort is part of the AFRL Collaborative Enterprise Environment (CEE) program that applies information and simulation technology to a broad spectrum of decision support activities. These include distributed planning; cross-domain technology development and sharing; system design, performance and cost analyses; test and evaluation; and distributed mission planning.

“The CEE research implemented in K2™ will facilitate collaborative virtual operations and affect a major cultural change in how business is conducted in the defense and commercial sectors,” said McQuay. @

Air Force Research Laboratory honors its top achievers

by Tim Anderl, Materials and Manufacturing Directorate

WRIGHT-PATTERSON AFB, Ohio — Air Force Research Laboratory took a huge step towards honoring its New Year’s resolutions during a ceremony at the Wright -Patterson AFB Officers’ Club January 10.

In an after-dinner speech given at AFRL’s First Corporate Awards Ceremony, Brig. Gen. Paul D. Nielsen, AFRL Commander, spoke of a resolution to recognize the laboratory’s people for their contributions and teamwork. These key elements, according to Nielsen, are the most important component for the success of the laboratory.

During the ceremony, Nielsen handed out 11 awards to individuals and teams who have demonstrated outstanding achievements in the areas of administrative support, leadership, mission support, and scientific and technical management.

Claudia M. Duncan, from the Sensors Directorate, received the Administrative Excellence Award for her performance as division secretary and secretary to the deputy division chief in the Automatic Target Recognition Technology Division. She managed the daily activities of six branch-level secretaries within the division as well as internal office activities.

TSgt Kenneth C. Harper, from the Human Effectiveness Directorate, received the Senior Administrative Excellence Award for his service as Superintendent of Information Management for the Warfighter Training Division. Harper provided administrative support for the 150-member warfighter training research team during Operation Allied Force. He also orchestrated delivery of 400 interim cockpit lighting kits for installation in more than 200 Air Force aircraft that were engaged in night combat missions.

The Turbine Engine Technician Team, from the Propulsion Directorate, received the Mission Support Team Award for their ex-

**MAKING
GOOD ON A
PROMISE**
Brig. General
Paul D.
Nielsen, AFRL
Commander
delivers an
after-dinner
speech during
the AFRL
Corporate
Awards
Banquet in



January. Gen. Nielsen said the lab, as a New Year’s resolution, promised to recognize its people as the most important component of the laboratory.

pertise and ingenuity in component evaluation. Their efforts made possible the attainment of Integrated High Performance Turbine Engine Technology, and evaluation of F-22 and Unmanned Air Vehicle propulsion system components. The team included Glen Boggs, Gary Downen, David Elkins, Terry Gillaugh, Gary Howell, Charles Jordan, John Kaehler, Robert Maggio, Jr., William Nilson, Mark Pennywitt, Bruce Tavner, Robert Wirrig, and Ronald Wolgast.

The individual Mission Support Award was given to SSgt. Raymond LePage, from the Space Vehicle Directorate, for service

(See Achievers/P.4)

Symposium (from page 1)

DAGSI Director Frank Moore said prior to the announcement of this year's award recipients. "So far we are doing okay."

Since 1998, the Joint AFRL/DAGSI Aerospace Basic Research Program has worked toward the support of faculty and graduate students at Ohio engineering and science graduate schools, based on AFRL requests using AFRL on-site resources. Awards support collaborative basic research between the U.S. Air Force, and the state of Ohio through the Ohio Board of Regents, provides \$4 million per year to support participation by Ohio research faculty and students.

Air Vehicles research projects will include the multidisciplinary design too to facilitate certification of aerospace components, alternative means of flow control over a lifting surface, controlling manifestations of high frequency, high amplitude disturbances, and the development and investigation of plasmas in the Mach 5.8 wind tunnel facilities.

Winning projects in the area of Sensors Technologies will focus on advancement of the multi-stage, interferometric radar signal processing technology to enhance radar clutter suppression capabilities, understanding of aero-optical distortion in turbulence and its control and modeling, improvement of target detection performance and performance predictions for airborne radar, and facilitating accurate mixed-signal network simulation and verification prior to acquisition.

The lone winner in the Information Technologies category will

explore and develop new approaches and methods of data handling.

Awards for proposed Materials Technologies projects are development of new non-destructive evaluation methods to prevent/reduce failures of airfoil-blade attachments in turbine engines, development of process modeling tools to predict microstructures of laser-based material build-up, faster development and implementation of oxide-based structural components, and development of a new class of aligned, nanotube reinforced thermoset composite materials.

Proposed Propulsion Technologies projects cover the investigation of free radicals in a supersonic flow using a radio frequency, development of fuel injection schemes which accelerate the mixing process, explore technologies critical to development of a "Smart Nozzle", and understanding the physical processes that cause spallation around high-pressure turbine cane film cooling holes.

Projects to be covered by Human Effectiveness Technologies are how the use of multi-sensory virtual interfaces (VIs) interacts with changes in display fidelity, visual, vestibular and other cues that impact a pilot's mental model of in-flight spatial orientation, using gene sets in toxicology studies to develop tools to organize, visualize and integrate new data sets, and examination of physiological impact of workload in executing dynamic supervisory control of distributed vehicles in a simulated unmanned combat air vehicles formation.

(See Symposium/P.5)

Achievers (from page 3)

as Noncommissioned-Officer-in-Charge of Digital Ionosphere Research and Development for the Battlespace Environment Division. LePage developed a relationship with warfighters by deploying to Korea to demonstrate laboratory tools used for enhancement of warfighter effectiveness. He also played a role in bringing the Air Force's first equatorial space weather station on-line.

The Scientific/Technical Management Award was given to Dr. Craig Denman, from the Directed Energy Directorate, for his management of the Laser Division. Denman worked to establish AFRL as a world-class organization in fiber laser technology by unifying several DoD and commercial partners as a team. He also developed a national program, Laser Integration Technology, which advances high power fiber lasers and manufacturing technologies by leveraging research and development in the multibillion-dollar telecommunications industry.

The Advanced Power Technology Team, from the Space Vehicles Directorate, earned the team Scientific/Technical Achievement Award for its in-house technical achievements in advanced power. They led the Air Force's effort to develop advanced power generation technology and integrate it into future space systems. This is reflected in the team's development, demonstration, transition, and application of next-generation space solar cells and solar arrays. The team includes Sgt. Troy Daigle, Drs. Dean Marvin and Kitt Reinhardt, Clay Mayberry, John Merrill, John Nocerino, Angelita Sainz, and Capt. Joseph Tringe.

Maj. Randy P. Broussard, from the Sensors Directorate, received the individual Scientific/Technical Achievement Award for his in-

house technical achievements with Advanced Combat Identification Systems. Broussard developed an algorithm for an advanced target identification capability that provides a 320 percent increase in the number of targets that can be identified. As a result, Air Force pilots will be able to identify enemy aircraft, which cannot be identified by any other operational platform.

MSgt. Norris Stokes, from the Directed Energy Directorate, received the Leadership Award for his outstanding leadership of the Commander's Support Staff at Phillips Research Site. Stokes reorganized several offices to ensure enlisted members at the site were taken care of. He also developed a new process for the unit quarterly awards, getting senior leadership to implement the changes in a quick and effective manner. During the award period, he also received Distinguished Graduate honors at the Air Force First Sergeant's Academy and the Academic Achievement Award from the Senior Noncommissioned Officer Academy.

Col. Jerald L. Straw, from the Human Effectiveness Directorate, received the Senior Leadership Award for his performance as chief of the Warfighter Training Division. Straw spearheaded the Distributed Mission Training demonstration at a Technology Exposition in Washington, D.C. He also orchestrated the division's deployment of \$12 million in simulation assets while coordinating with seven other agencies. His direction led to the extension of training and technologies in next generation Air Force readiness training from the Mesa Research Site to the rest of the Air Force.

The Commander's Cup Team Award went to the Sensor Protection Kosovo Support Team, from the Materials and Manufacturing

(See Achievers/P.5)

Air Vehicles Technologies project winners are –

“Analytical Certification and Multidisciplinary Design”, Lt. Col. Robert A. Canfield, AFIT (Partners – WSU, University of Toledo (UT), and AFRL/VAS);

“Design and Analysis of Active Flow Control”, Dr. Ephraim J. Gutmark, UC (Partners – AFIT, Ohio University (OU), AFRL/VACA, and AFRL/MNA);

“High Frequency, Inertial Subrange Excitation for Directed Energy, Weapon Bay, and Reacting Flow Applications”, Dr. Mo Samimy, OSU (Partners – UC, AFRL/VAAI, AFRL/VA, AFRL/PRA);

“Generation and Characterization of Stable, Weakly Ionized Air Plasmas in Hypersonic Flows”, Dr. J. William Rich, OSU (Partners – AFIT, WSU, AFRL/VAA).

Sensors Technologies award winners are as follows –

“Interferometric Radar Clutter Suppression”, Dr. Michael A. Temple, AFIT (Partners – UD, WSU, AFRL/SN, AFRL/SNRP, AFRL/SART);

“Prediction and Control of Aero-Optic Aberrations”, Dr. Mo Samimy, OSU (Partners – UD, AFRL/SNJM, AFRL/SN, AFRL/VA);

“Performance Assessment for Foliage Penetrating Radar Target Detection”, Dr. Randolph L. Moses, OSU (Partners – WSU, AFIT, AFRL/SNAA, AFRL/SNR, AFRL/SNA, AFRL/SNRR);

“Mixed Signal Modeling for System Level Simulation”, Dr. Ranganadha Vemuri, UC (Partners – WSU, OSU, AFRL/SND, AFRL/SNDM).

The category winner for Information Technologies is –

“Content-Based 3D Information Compression for Real-Time Image and Signal Detection”, Dr. Yuan F. Zheng, OSU (Partners – UC, AFIT, UD, AFRL/IFTA).

Winners for the Materials Technologies projects include

– “Nondestructive Evaluation Methods to Quantify Fretting Damage in Materials”, Dr. Peter B. Nagy, UC (Partners: AFIT, AFRL/MLLP, AFRL/MLLN);

“Prediction and Control of Microstructure in Laser-Based Solid Freeform Fabrication of Aerospace Materials”, Dr. Nathan W. Klingbeil, WSU (Partners – OSU, AFRL/MLLP);

“A Novel MEMS-Based, Combinational Chemistry Approach to Measure Interfacial Strength in Advanced Materials”, Dr. Peter M. Anderson, OSU (Partners – Case Western Reserve University, AFRL/ML, AFRL/MLLN);

“Carbon Nanotube-Reinforced Liquid Crystal Structural Composites by Electron Beam Curing”, Dr. Richard P. Chartoff, UD (Partners – UC, Kent State University, AFRL/MLBC, AFRL/MLBP).

Propulsion Technologies winners are –

“Studies of Non-Thermal Ignition Phenomena for Aerospace Applications”, Dr. Vish Subramaniam, OSU (Partners – UC, AFRL/PR, AFRL/PRPS);

“High Speed, Air Breathing Propulsion”, Dr. Ephraim J. Gutmark, UC (Partners – OSU, AFRL/PRA);

“Development of Technologies for ‘Smart-Nozzle’ Applications”, Dr. Gilbert E. Pacey, Miami University (Partners – WSU, AFRL/PRTSS, AFRL/PRTG);

“Flow Physics of Incomplete Combustion Product Interaction with Film Cooling Holes”, Dr. Paul D. Orkwis, UC (Partners – WSU, AFRL/PRTC, AFRL/PRTT).

Human Effectiveness Technologies projects to receive funding are –

“Robotic Systems for On-Orbit Servicing”, Dr. Janet M. Weisenberger, OSU (Partners – WSU, AFIT, AFRL/HEC, AFRL/HECP);

“Pilot Spatial Orientation”, Dr. Curtis H. Spenny, AFIT (Partners – WSU, AFRL/HEC, AFRL/HEM, AFRL/HEP);

“Bioinformatic Support for Toxicogenomics”, Dr. Brent D. Foy, WSU (Partners – OSU, AFIT, AFRL/HEST);

“Adaptive Aiding Using Physiological Operator Functional State Assessment”, Dr. Ling Rothrock, WSU (Partners – WSU, AFRL/HEC). @

Achievers (from page 4)

Directorate, for providing direct warfighter support during Operation Allied Force. Initiated by an “urgent and compelling request” to protect Air Force aircraft, the team combined efforts of a multi-organizational team to design and fabricate a laser hardening component, integrate and bench test the retrofit, and field test the modified system against a threat laser before flight testing. This was done in only 11 days. Members of the team included Charles Lovett, Elizabeth Milliken, Lt. Jacob Porter, and Christopher Ristich.

George A. Slenski, leader for the Electronic Failure Analysis Team of the Materials and Manufacturing Directorate’s Systems Support Division, received the Commander’s Cup Individual Award. Slenski led several critical Air Force accident investigations, initiated a focused national attack on aging wiring issues, and influenced program decisions by NASA, the National Transportation and Safety Board and the Federal Aviation Administration. His efforts significantly improved the safety and reliability of multiple Air Force and commercial aircraft. @



COMMANDER’S CUP RECIPIENT - George Slenski, (pictured on right) leader of the Electronic Failure Analysis Team of the Materials and Manufacturing Directorate’s Systems Support Division, was presented the Commander’s Cup Individual Award by Brig. Gen Paul D. Nielsen.

Columns

CIO Tips

OPSEC: Illusion or fact...Minimizing the risk

by Theresa Anderson, HQ AFRL Security Office

WRIGHT-PATTERSON AFB, Ohio — Is our trash someone else's treasure? Do we protect our sensitive information from unauthorized access? Are we looking at our OPSEC program from the eyes of our adversaries? These are simple questions that you need to ask yourself when dealing with sensitive unclassified information.

How could someone, seemingly just like you and me, steal our technology? A frequently asked question that is actually very difficult to answer. Answering why they did it, convicted spies themselves have collectively identified a number of motivating factors for spying, often in combinations, they are: sense of anger, disaffection, revenge - getting back at "the system" or a specific person.

Anger is the most prevalent motivation found in espionage. Greed and financial need is another top reason they have the perception that money can fix anything, that it can buy happiness. The adventure or thrill of the act, which in their minds would add excitement to an otherwise boring life is an increasing reason of why they spy. Another could be ego or self-image, to try to repair wounds to self-esteem and this is often coupled with anger and revenge. A desire to please or win the approval of the foreign intelligence officer who has been recruiting that person is called ingratiation and is considered one of the top reasons for spying. The sense of helping the "underdog", perhaps because they feel like an "underdog" themselves is a spying reason referred to as identification/ideology attempts.

There is no absolute prevention. Certain measures can possibly deter or at least detect espionage. You can play a real and vital role in this effort. Be especially alert to the situational stressors and personality characteristics that lead people to consider espionage as a way of solving problems.

Preventative Measures must be taken to guard against spies. Some of them include simple techniques such as the "trash can". Don't throw anything in the trash that you would not want to hand to a spy. Don't try to talk around sensitive topics over an unsecured telephone line. Ensure everyone you are dealing with has a need-to-know before you release any sensitive information to him or her. Use of shredders for destruction of program information is a necessity to preventing unauthorized disclosure of your critical information.

I can't stress it enough that you have to take OPSEC seriously in protecting your information. Always ask yourself, "Will this information that I am dealing with, if released into an adversaries hands cause damage to our national security"? If the answer is yes, then PROTECT IT and take the appropriate measures to not allow it to fall into the wrong hands.

Your Operations Security (OPSEC) program should be designed to prevent unauthorized disclosure of sensitive unclassified information falling into the hands of our adversaries. OPSEC provides a holistic picture of our operation, from the outside in. It is a systematic process that looks at our mission through the eyes of an adversary. Your OPSEC processes should identify your critical information, be able to analyze the threat to that information, discover the vulnerabilities and develop appropriate countermeasures based on the vulnerability and inherent risk.

An internal review of all technical material should be approved/coordinated by your OPSEC Security Program Manager within your organization prior to public release to ensure no critical information is present to include internet postings, success stories etc.

If you believe that someone may be contemplating espionage or other criminal activity, or has taken steps to initiate it, you are obligated to immediately report this information to your Security/Counterintelligence Office.

So again let me ask you these two questions, do you have a solid OPSEC process that protects your information and technology? How do you look at your OPSEC program as fact or fiction?

Espionage is alive and well especially here at Wright-Patt. Don't fool yourself into thinking that our adversaries do not want our information. Science and Technology for tomorrow's aerospace forces is our allegiance; to protect that technology should be our privilege and duty. You are the one who keeps our technology protected, our nation secure and our world a safer place.

So the next time you throw something away remember what we may see as trash could be our adversaries treasure. @

AFRL Quarterly Awards

FEBRUARY 2000

Award winners from Oct. 1 through Dec. 31, 2000

Manager of the Quarter

Patricia A. Schmidlapp (AFRL/HR)

Employee of the Quarter

Julie A. Dingus (AFRL/HR)

Administrative Employee of the Quarter

Janet L. Magee (AFRL/CVM)

Team of the Quarter

AFRL HQ S&T Summit Team —

Stephanie Flanagan, Joseph Gordon, Col. Gerry Hasen, Lt. Rod Koch, Kristi Laug, Tony Lizza, Joseph Orłowski, Pamela Powers, Keith Thompson, Rafe Villalba, Sarla Joy, Capt. Tim Schulteis and Diana Carter

T D S p o t l i g h t --

Information Directorate: Dedicated to meeting challenges of the information age

by Information Directorate

ROME, N.Y. — The Air Force Research Laboratory Information Directorate is a vibrant confluence of information specialists; electrical and computer engineers, computer scientists, mathematicians, physicists and a supporting staff.

Headquartered in the Griffiss Business and Technology Park, site of the former Griffiss Air Force Base, the directorate is organized into four technology mission divisions ranging from Site Operations and Business Management to Financial Management and Contracting. It also boasts four branches of its missions divisions at Wright-Patterson Air Force Base, Ohio.

All members of the staff are dedicated to exploring, building, exploiting, and brokering the science and technology associated with meeting America's aerospace information technology needs for the 21st century.

Specifically, directorate scientists and engineers develop systems, concepts and technologies to enhance the Air Force's capability to successfully meet the challenges of the information age. They develop and integrate programs to acquire data; find better ways to store, process and fuse data to make it into information; and to create means to deliver and present tailored information to allow the military decision-maker to have the total sphere of information needs for successful operations worldwide.

Directorate research focuses on three primary technology thrusts: Dynamic Planning & Execution, Global Information Exchange, and Global Awareness.

Dynamic Planning & Execution concentrates on the aerospace commander's ability to rapidly acquire and exploit superior, consistent knowledge of the battlespace, through a worldwide-distributed decision-making infrastructure of virtual battlestaffs and intelligent information specialists.

Global Information Exchange creates the ability to interconnect all members of the air Force via a netted communication and



information system, available anywhere, at any time, and for any task or mission. The ability to communicate by moving raw and processed information throughout a global communications grid is fundamental to successful command and control.

Global Awareness entails the affordable operational capability, from local to global level, for all pertinent personnel to understand militarily relevant situations on a consistent basis with the precision needed to accomplish the mission. That understanding is achieved by exploiting information from intelligence, surveillance and reconnaissance sensor data, as well as examining open

source and commercial data, that is required for the entire spectrum of military operations. The information is then fused to support Dynamic Planning & Execution, via the Global Information Exchange distribution system.

The Air Force's research and development heritage at Rome began in June 1951, with the establishment of Rome Air Development Center. RADC was redesignated Rome Laboratory, one of the Air Force's four "super" laboratories, in December 1990. The Rome Research Site was created in 1997 with the establishment of AFRL. @

Net Index

Due to the number of submissions we receive, some sections of *news@afrl* are available exclusively on-line. The on-line version of the newsletter allows users to view the AFRL corporate calendar, news releases generated by AFRL headquarters, operating instructions, L@b L@urels and Roundups sections.

The L@b L@urels section of the electronic newsletter is dedicated to members of Air Force Research Laboratory who receive awards and honors. The Roundups section of the electronic newsletter keeps Air Force Research laboratory employees informed about contracts AFRL has awarded. Below is an index of articles one can find in each of these on-line sections.

L@b L@urels

- Rome team wins IEEE supercomputing challenge
- Information scientist, Linderman, named IEEE fellow
- Munitions lab scientist garners Air Force award
- AFRL Major honored as Outstanding Young American

- DE's Hedrick recognized for contribution and leadership
- Ohio Sen. Horn honored for advocating WPAFB
- Balldin earns two Swedish awards for Brooks work
- British exchange officer earns award for research



Dr. Forster

- Propulsion scientist honored by engineering society (*pictured above*)

Roundups

Meet AFRL

- Contract provides support for Starfire Optical Range
- Information Directorate awards \$1.4 million contract
- AF improving odds of hitting moving surface targets
- Rome directorate signs contracts for AMSTE II program
- Hanscom trivia buff earns a spot on Jeopardy
- Brooks physicist applies science to sport of powerlifting
- Peasant honored as a 2001 Laureate for IRSS project

To view the full text of these and other articles visit the *news@afrl* page on the Internet at <http://extra.afrl.af.mil/news/index.htm>.

To submit L@b L@urels or Roundups from your directorate, send a query to AFRL Public Affairs at:

Vicki.Stein2@afrl.af.mil
or,
Anne.Gunter@afrl.af.mil

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